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May 18, 2017

VIA, ELECTRONIC FILING

The Honorable Jocelyn Boyd
Chief Clerk and Administrator
The Public Service Commission of South Carolina
101 Executive Center Drive
Columbia, South Carolina 29210

Re: • **Docket Number 2017-1-E**
• **Direct Testimony of Timothy Daniels on Behalf of Adger Solar, LLC**

Dear Ms. Boyd:

Enclosed for filing is the Direct Testimony of Timothy Daniels on behalf of Adger Solar, LLC, Cover Sheet and Certificate of Service.

All parties of record have been served. Please notify the undersigned if you there is anything else you may need.

Respectfully Submitted,

/S/_____
Richard L. Whitt

RLW/cas

**DIRECT TESTIMONY OF
TIMOTHY DANIELS
ON BEHALF OF ADGER SOLAR, LLC
DOCKET NO. 2017-1-E**

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Timothy Daniels, and my business address is, 20 Towne Drive, Suite 388,
Bluffton, South Carolina 29910.

**Q. DESCRIBE YOUR EDUCATIONAL BACKGROUND AND BUSINESS
EXPERIENCE, AS IS RELATED TO THE SOLAR INDUSTRY.**

A. BA in Political Science from Emory University, MS in Environmental Sciences from
Johns Hopkins University and Graduate Courses in Economics from both Johns Hopkins
University and New York University.

**Q. PLEASE DESCRIBE YOUR BUSINESS EXPERIENCE AS IS RELATED TO
REGULATORY MATTERS REGARDING THE SOLAR INDUSTRY IN SC**

A. I have worked in energy matters for twenty years and I have been involved in solar
development for six years, with my current position being that as, Principal and Co-
Founder of Adger Solar.

Q. ON WHOSE BEHALF ARE YOU PROVIDING THIS TESTIMONY?

A. Adger Solar, LLC.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. No. I have not had the privilege of appearing before this Commission before today, but I have testified concerning matters before utility Commissions in several States including Delaware, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts.

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY

A. To offer the position of Adger Solar, LLC, relevant to the Company's filing in this matter.

Q. DOES DEP'S TESTIMONY ADEQUATELY DEMONSTRATE THAT IT HAS PURSUED THE LEAST COAST FUEL PROCUREMENT STRATEGY?

A. It is not clear from DEP's testimony filed in this Docket, that it has pursued the least cost energy options that are available to it in the South Carolina market. In particular, despite the fact that DEP's current Integrated Resource Plan ("IRP") contemplates that it will procure energy from several thousand megawatts of solar projects over the coming years, DEP provides no evidence in this proceeding that it has entered into any cost-effective utility-scale solar power purchase agreements in South Carolina over the last year.

1 **Q. HOW HAVE YOU CONCLUDED THAT DEP HAS NOT FULLY TAKEN**
2 **ADVANTAGE OF COST-EFFECTIVE, UTILITY-SCALE SOLAR?**

3 **A.**I have reached this conclusion based on several factors. First, DEP included no discussion
4 of new utility-scale solar procurement in its testimony. DEP did discuss existing PURPA
5 contracts and the costs of the Distributed Energy Resource Program, but nothing on new
6 procurement of cost-effective, utility-scale solar. Second, as of May 18, 2017, there were
7 only four solar Power Purchase Agreements filed with this Commission – a relatively small
8 quantity compared to SCE&G, which has twenty-four solar Power Purchase Agreements
9 filed with this Commission.

10
11 **Q. WHAT IS THE CURRENT MARKET PRICE FOR ENERGY FROM UTILITY-**
12 **SCALE SOLAR PROJECTS?**

13 **A.**Based on my company's experience with the development of utility-scale solar projects in
14 South Carolina, we have seen the levelized cost of energy from utility-scale solar decrease
15 to its current level in the high-\$30 to mid-\$40/MWh for a term of 15 years for a market
16 such as DEP's, which is in an optimal part of South Carolina for utility-scale solar
17 development. As an additional point of reference, one of Adger Solar's project companies
18 executed a Power Purchase Agreement on April 18, 2017, with SCE&G for its 74.9 MWac
19 Shaw Creek Solar project in Aiken County, South Carolina, for a term of 20 years, at a
20 levelized price of approximately \$38.50/MWh.

Q. HOW DOES THE MARKET PRICE FOR ENERGY FROM UTILITY-SCALE SOLAR COMPARE WITH DEP'S AVOIDED COSTS?

A. Compared to DEP's updated 15-year levelized avoided cost rate of \$50/MWh identified in its testimony, the market price for energy from utility-scale solar is at worst, 10% lower and at best, 20% lower.

Q. BECAUSE THE AVOIDED COST RATES INCLUDE A LEVELIZED CAPACITY VALUE, WOULD DEP HAVE REALIZED A REDUCTION IN ITS FUEL COST IN THE NEXT 12 MONTHS IF IT HAD ENTERED INTO POWER PURCHASE AGREEMENTS WITH UTILITY-SCALE SOLAR PROJECTS IN SOUTH CAROLINA?

A. Yes, it is true that the way DEP's avoided cost rates are structured DEP would pay a levelized price for capacity starting in the first year of the power purchase agreement even if DEP's capacity need date does not occur until several years later. However, under PURPA, DEP has the ability to negotiate power purchase agreements and this can include changing the rate structure in such a way that the agreement does result in near-term fuel savings. For example, DEP could consider a rate structure that is based on a first year price and an escalator of perhaps 3-4%. This would result in very low pricing in the early years of the contract. Another option would be to begin paying the capacity value starting on DEP's need date, rather than levelizing it over the full term of the power purchase agreement, and then negotiate an energy rate that is below DEP's avoided cost or based on a low first year price that includes escalation.

**Q. WHAT WOULD BE A REASONABLE UTILITY-SCALE SOLAR
PROCUREMENT GOAL FOR DEP?**

A. To maximize cost reductions for DEP's South Carolina rate payers, I recommend a target of no less than 260 MWac of utility-scale solar to be located in South Carolina and procured over the next two years. This quantity is approximately 20% of DEP's South Carolina peak load and also represents about 50% of the utility-scale solar in DEP's FERC-jurisdictional interconnection queue as of March 8, 2017. It should also be noted that this target is only approximately 8% of the quantity of incremental solar, DEP expects to add to its system by 2030 under its high solar penetration scenario in its current IRP.

**Q. WHAT WOULD BE THE RATE PAYER SAVINGS IF DEP PURSUED A GOAL
OF THIS MAGNITUDE?**

A. While calculating the exact savings is speculative it is possible to provide a reasonable estimate of savings. First, let's assume that DEP had executed 100 MWac of power purchase agreements for projects that would enter commercial operations on July 1, 2017. Then, let's assume that DEP used a contract structure where the avoided capacity costs were not levelized and were only paid to the project starting on DEP's capacity need date. Finally, let's assume that the energy rate would not be levelized and would be \$5/MWh below DEP's avoided energy cost. This energy savings assumption is conservative since this would only imply a total levelized price of energy and capacity for the solar of \$45/MWh, or \$5/MWh below DEP's new 15-year avoided cost rates.

1 Based on a capacity factor of 26%, the 100 MWac of utility-scale solar would produce
2 approximately 227,760 MWh in the first year of operations. With a \$5/MWh savings this
3 would equal **\$1,138,800 in rate payer savings during the first year.** Using the same
4 assumptions as above and an assumed annual production degradation rate of 0.5%, the total
5 rate payer savings over the 15-year term of the contract would be approximately
6 \$16,500,000.
7

8 **Q. PLEASE SUMMARIZE YOUR TESTIMONY**

9 **A.** In summary, it my position that DEP's requested rate increase should only be approved by
10 this Commission, if DEP can demonstrate that it has pursued the least cost fuel procurement
11 options consistent with its current IRP. I find little evidence in DEP's testimony that it has
12 procured, or sought to procure, cost-effective utility-scale solar resource in South Carolina
13 at below its avoided cost. With the continued decrease in costs, utility-scale solar today is
14 the least cost new generation resource in South Carolina with pricing that is 10-20% lower
15 than DEP's revised avoided cost rates. If DEP had procured 100 MWac worth of energy
16 from utility-scale solar in South Carolina, which is less than 20% of what is currently in
17 DEP's transmission interconnection queue, I estimate that this action would have resulted
18 in at least \$1,138,800 for its rate payers over next twelve months.
19

20 **Q. DOES THAT CONCLUDE YOUR TESTIMONY?**

21 **A.** Yes.
22

**BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA
DOCKET NO. 2017-1-E**

IN RE: Annual Review of Base Rates for
Fuel Costs of Duke Energy
Progress, LLC

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CERTIFICATE OF SERVICE

I, Carrie A. Schurg, an employee of Austin & Rogers, P.A., certify that I have served copies of the Cover Sheet, Direct Testimony of Timothy Daniels on behalf of Adger Solar, LLC and this Certificate of Service, as indicated below, via electronic mail on May 18, 2017.

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/s/

Carrie A. Schurg

May 18, 2017

Columbia, South Carolina